

A Work Project, presented as part of the requirements for the Award of Masters Degree
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SER LEAN PROJECT – INTERNSHIP AT MILLENNIUM BCP

Filipe dos Santos Gomes Alves, # 422

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Professor Elizabete Cardoso

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Abstract

Financial institutions are turning their attentions to *lean* methodology. Strong competitive financial markets demand that organizations search for new ways to achieve competitive advantage. *Lean* thinking proposes a new method to reach high efficiency: the kaizen approach, which advocates a change in the mind set of all stakeholders towards continuous improvement. In this work project is represented the *lean* methodology applied at the bank, from a bottom-up spirit, as well as the evaluation of the benefits and the achievement of the proposed goals.

Keywords: Lean; Kaizen; Financial Institutions

1. Introduction

The scope of this work project is an internship in the Operations Department of BCP, applying *lean* methodology to different areas outside of the department. In the first chapters I will explore the theory of the *lean* concept and its development, switching to a more practical review of this concept in further chapters explaining the methodology used at the bank and the results of the project.

The term *lean production* emerges right after World War II, with the pioneer Toyota's approach to mass production: the Toyota's Production System (TPS), that aimed to do more and more with less and less (Womack and Jones, 1996). This may sound obvious, but *lean* approaches this problem in a different manner. The desire to deliver value to customer, to remove all process wastes, to produce in a continuous flow, and to be competitive in the automobile market without having economies of scale (such as General Motors enjoy), has led Taiichi Ohno¹ to rethink the whole TPS, and build the Toyota's *house* of a *lean* enterprise (Exhibit I). The *house* highlights key concepts and supports of the TPS. There are two main

pillars: the *JIT* and the *Jidoka*'s. *JIT*, *just-in-time* production, is a technique that requires the company to produce only when the customer orders the product and is based on a pull system. The other pillar refers to the concept *jidoka*, which is a combination of automation with human

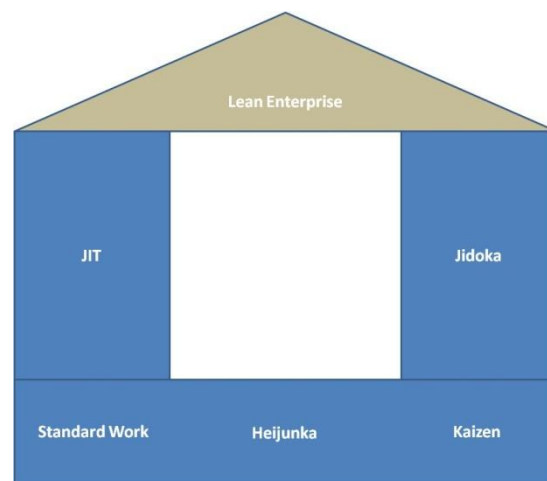


Exhibit I: The *Lean* House

self-government that enables employee to detect a defect, fix the problem and ensure it

¹ Taiichi Ohno was an executive vice president at Toyota Company. He changed the whole framework of the enterprise, introducing new concepts such as the well-known just-in-time production. He is known to be father of the TPS.

does not happen again. At the bottom of the house one can find *heijunka*, a Japanese word for leveled production. The goal of this concept is to have a balanced, value-added and continuous flow, where the production flows step by step with low (zero in a perfect system) waiting times. Finally, also at the bottom of the house, one can find the standard work and *kaizen* as important concepts too. *Kaizen* (continuous improvement) approach seeks to create an environment in which improvements occur continuously, by reducing variability in performance and developing the skills and awareness of employees so that they can identify and eliminate waste. Until the beginning of the 90's, *lean* production did not have a structured and organized conception, and it was completely ignored by the western world. At this point, James P. Womack, a former research scientist at MIT, started studying the TPS and coining this with the *lean* manufacturing concept. There are five main *lean* principles, and these are the base point of every *lean* methodology: i) Value Proposition; ii) Value Stream; iii) Flow; iv) Pull; v) Perfection.

2. *Lean* Principles

Although the rise of *lean* thinking has taken place in the automotive industry, its fundamental principles are being applied more and more to financial services. This document covers its application in a banking environment

i. Value Proposition

The identification of the value proposition is the starting point of every *lean* strategy. To be aware of what customers value, how they interact with the organization and the market overall - in short, focusing on customer - is crucial to accurately define the value proposition of a specific products/services provided by the corporation. Very commonly producers fail in defining value, for the reason that most of them start at the wrong

place, wanting to produce what they are already offering, and customers fail in this task too, because they only claim for ways to improve what they are already buying, not switching their view for some different product/ service. Thus, it is very important to challenge the traditional view of value, to get in touch with customers, to survey them and understand what can be done differently and what can add value to them. Another important aspect is to understand the value of the whole product/ service, in other words, to have an *end-to-end* vision of the process flow. The lack of interaction between suppliers and other providers of certain service/ product parts doesn't allow for higher efficiency to the whole process and it happens because there is no global view of that process. For example, the provision of an internet service is, typically, a process that requires more than only one company. There is the company that sells the service to customer, and afterwards contracts an outsourcer to install all the equipments (cables, satellites, modems, etc.). These companies do not work together, do not try to understand the value added by the whole service to the client and fail in understanding that wastes and inefficiencies are very often in the way they connect to each other, rather than in their own specific activity. However, the customer is worried with the whole process.

ii. Value Stream Mapping

This is the most attractive part of the *lean* methodology for most of the people, but against what may be expected, it is not the easiest one. The value stream mapping (VSM) is a very visual technique, so is important to make it visually appealing. The purpose of VSM is to describe in high detail, simple terms and with high precision all steps of the flow of a certain process. It is very likely that the map will not be finished on the first attempt, so it is important to be aware that it will bear changes while trying

to transpose the whole process to a piece of paper. In this *lean* principle, I think is helpful to describe the bank's methodology for VSM once it is very similar to what is illustrated in many books. Hence, the *Lean* Project applies the following steps for VSM:

- A team is assembled, called the project's team, which is composed by *lean* experts. To this team is added a professional who works everyday in the process (*lean* agent), that will help to do the connection with all other employees. The VSM is constructed based on the input provided by all employees of the area. They are the key elements at this stage, since they are the experts of the process and must detail every step of the flow. This is done with post-it papers, in order to make it simple and changeable.
- The next step is to validate the map with a key process stakeholder in the *lean room*. This stage allows for spontaneous identification of possible sources of waste and different practices for same steps; labeled as *issues*. When this happens, a post-it with a strong color will identify the step where this occurs.
- Third, the team converts the VSM in a digital form, prints and goes to the work station in order to check the accuracy of the value stream maps, side by side with a selected employee.
- Finally, a brainstorming is promoted, over the map, with the contribution of all employees, aiming to find ways of improving the process and how to remove wastes.

This stage is clearly all about *muda* identification. *Muda* is a Japanese word for waste, very repeatedly used in the *lean* vocabulary. Literature indentifies seven types of waste. We've added one more type: operational risk. The following exhibit describes all of them:

Exhibit II: The eight wastes

#	Type of waste	Description
1	Over production	Producing more than necessary, for no specific customer, when is not required and adding no value
2	Waiting time	This kind of waste occurs when a person or equipment is waiting for a resource and/ or signal to perform their task.
3	Transport	Moving the product/ service to different locations of the organization. It consumes time, space and increase costs that add no value to clients
4	Over processing	Over processing happens when a specific step within a process is not needed, not adding value to final product/ service.
5	Inventory	This is a waste when there is more than necessary storage of products, raw materials and others. All these bring high costs of money and space to the enterprise.
6	Defects	Among defects one may find errors during the process, quality problems and repairing (rework).
7	Wasted Motion	Excessive movement of people, data, decisions and information. While moving, they are not adding value to process.
8	Operational Risk	Specific activities, within the process flow, that carry excessive operational risk for the institution.

iii. Flow

After the value stream mapping, the following rationale step is to think about flow.

Lean practices constantly seek new ways to turn the production of a good/ service into a continuous flow. This theory goes a little against the Batch-and-Queue method of mass production. Continuous flow requires a different approach to production: a perfect communication with suppliers, in order to remove waiting times when the company requests materials from others, to better schedule this supply of products and the location where they ought to be provided; a higher degree of autonomy to the employee, which leads us to the *jidoka*'s concept, recognized as the transference of human intelligence to machinery, so this equipment is able to detect little defects, immediately

stops producing and reports the error, avoiding the production of defective goods. It is given the same autonomy to the employee when she detects some defect. This *jidoka*'s concept does not directly apply to the scope of my internship, once the role of automation in financial services is little or even zero. However, continuous flow also demands the organization to think in terms of product's flow, rather than section's flows, to abolish possible bottlenecks of the process flow. It is very common, in financial services, that teams are organized by product teams, where a specialist is able to analyze a process with an *end-to-end* vision and has a certain degree of autonomy. One of the most important aspects in rethinking flow is the focus on customer and to ensure each step actually creates value. Steps that do not add value to customer can be divided into two types: (1) those which do not create value to customer but are required to the product development by law, and therefore cannot be removed from the flow; (2) those steps that create no value to customer and are not imposed by law, and so can be immediately removed. For the maintenance of a continuous and efficient flow, it is also important to set up a leveled (*heijunka*) and organized production. To level the production, is important to create a sequence order in a repetitive pattern (standardization), an order that makes sense for the provision of the service from the customer's perspective, rather than the producer's view. This leads to the next important point that assures a continuous flow: the pull system.

iv. Pull

The *lean* approach advocates that a company must work based on a pull system, also called *JIT* production. JIT, as the name suggests, is a system for producing and delivering the right items, at the right time, in the right amount. It is all about meeting the expectations of the customer - not going beyond it. This is a good method to level

the production, to allow a single piece flow and avoid excessive inventories and wasted production. Two important concepts are influenced by this methodology: the *lead* and *takt* time. The time that a service requires to be provided is the sum of *touch time* - total time the employee is actually working on the service's provision - plus the *waiting time* - those times the different employees involved in the process are waiting for some material and/ or orientation to start processing their tasks within the whole process. This total time is called the lead time of a process. JIT methodology helps an organization to decrease the waiting times of the process and, consequently, the lead time, which is the perspective of the customer. *Takt* time is a measure for a cycle of production, this is, the available working time divided by the rate of customer demand. For example, if clients demand to answer five claims a day, and a day has 420 minutes of work, the *takt* time is 84 minutes per claim. This time sets the pace of the production and levels it.

v. Perfection

The last *lean* principle is strongly present in the case of this work project. As we will see in a further chapter, one of the goals of this project is to spread a new culture amongst the employees, the *kaizen* culture. The implementation of *lean* has been done from a bottom-up perspective, going entirely against the top-down spirit that is the reality of most of the companies. *Lean* is not just a performance-improvement exercise but a transformation program that allows an organization to make constant improvements in its way of working (BNP Pariba's CIO). The intention is to spread a message to employees to pro-actively, and constantly, find new opportunities of improvement, that *lean* is also about culture, not only a way to improve efficiency of processes. *Lean* methodology will become part of the employees' days. Thus, to make the transformation of spirit, teams of 10 employees will have a *lean agent*, that will be

committed to carrying out morning briefings, to collect all the new improvement ideas and the nomination of responsible for each idea. Again, I will detail the bank's methodology in a further chapter, but it is now important to understand that *lean* is a change of culture, about empowering employees to persecute more efficient processes with a certain degree of autonomy. A very important requirement for the effectiveness of this message is the commitment of hierarchies. There are cases where *lean* implementation was not effective, mainly because employees did not believe in its success and importance due to the lack of executives' commitment with the project. Thus, for the sake of the project, it is important that directors transmit a message of commitment and value.

3. *Lean* methodology applied to services: differences and challenges

The application of *lean* principles to services sector may be very different from the industry. Not only it has a separate context from manufacturing, but also it differs fundamentally in structure, calling into question *lean* principles' universal applicability (Staats et al, 2010). Knowledge work has a more dynamic character, which carries on a huge volatility in demand. In bank's environment is hard to standardize work to reduce its variability due to the nature of tasks their employees perform, that may vary widely from one customer to another. Plenty of activities require customization and expert judgment, which entail many discrete steps and a certain degree of expertise. Likewise, the visibility of processes and their connections is low. Important parts of a services' flow are kept in analysts' minds, or in computer folds that frequently are saved in disks that give no access to all stakeholders, which prevents problems to be identified and solved early enough. When analyzing a process flow, is hard for an employee to distinguish the different parts of a decision process. For her/ him it is a single piece,

which makes hard to explore the whole steps of a flow and find room for improvement. A last challenge is the difficulty many organizations have in sustaining the change towards a kaizen approach, plenty of times due to inadequate attention paid to the motivation and behaviors of employees which has a high influence on knowledge work.

4. Practical case: Ser Lean Project at Millennium BCP

The project had its origin more than one year ago, originally applied to the Operations Department, therefore I took part of a team that already had its own methodology developed (although it is subject to constant improvements) - no new proposed methodologies were used.

i. Goals

The *lean* project at the bank has two core goals, one that pretends to be a cultural change, so it assumes a behavioral perspective, and another one that aims at improving processes, so it has a major technical component. The following exhibit congregates the goals of the project in two major groups:

Dissemination of the Lean Culture	Processes Optimization
<ul style="list-style-type: none"> • Introduce employees to lean vocabulary • Promote a lean attitude • Increase pro-activity • Management towards continuous improvement • Bottom-up spirit 	<ul style="list-style-type: none"> • Improve resources allocation • Increase productivity • Reduce errors • Services' improve • Decrease operational risk

Exhibit III: Goals of the Ser *Lean* Project

There can be listed some outputs expected to take place due to the achievement of the proposed goals. The implementation of this project will result in: detailed value streams;

maps with improvement opportunities and its potential benefits; implementation of local solutions; visual management tools; local programs of continuous improvement and development of employees' skills. It is important to highlight that in this *Lean Project* the priority of solutions is given to those that do not require IT developments, with immediate implementation and low cost characteristics. Even though these solutions, very often, do not carry the highest efficiency gains per se, if compared with those of IT developments for instance, they are of low cost and of high frequency, carrying a multiplication effect, granting high savings to the enterprise at the end of the year.

ii. Project's Methodology

To apply the *lean* project to other areas outside the Operations Department, a project's team was assembled and composed by 3 members plus a *lean agent*, as it was exposed in point ii) of section 2. This team (where I was included) was responsible for the implementation of the project. As *lean* experts, even though not experts in the specific process, we were responsible for the success in transmitting the *lean* methodology and culture. The proposed methodology for this project is composed by three important stages.

- a. Preparation.** In a first stage, the project team is in charge to prepare and provide all the resources needed for the entire project. Perhaps it does not seem an important step, but actually to ensure a room fully available during the project, plays a crucial role. This *lean room* gives a sense of importance and ownership to the employees and helps the buy-in of the project. Another important task, at this point, is to accurately identify the activities that will be under analysis within the whole process of the department. This is done in a meeting between the team, the department's officer and the *Lean Agent* of the

department. After this is done, two kick-offs take place: one with the hierarchies and another one with all other direct stakeholders. These events are simple and short presentations, where stakeholders are introduced to what is *lean*, in a broad and quick perspective, the methodology to be used and the time frame. Finally in this stage, the project's team provides a 2 hours training session for the employees, introducing them to processes' methodology as well as to *lean* thinking, clarifying subjects such as: what's *lean*? Its origin? Why is this important? How can they benefit with this project? What methodology will be used? How they may help for the sake of the project?

b. Value Stream Mapping and Improvement Opportunities. The second, and one of the most important parts of the project, is the VSM and improvement opportunities (*issues*). The methodology to be used in this stage is the same as described in point ii) of section 2 of this report, so I will not repeat that.

Important is to highlight that at this point the project aims at finding improvement opportunities. This is crucial once it can be an important visual management tool, and a way to engage stakeholders with the *lean* thinking.

The role played by employees of the department is important, once they are the experts that daily interact with the process. However, not less important is to quantify benefits, and this is a project's team role. Whenever an issue is discovered, it is important to list it and quantify benefits, both in financial terms or in FTE's. The Full Time Equivalent is a measure for the theoretical time of employee work:

$$1 \text{ FTE} = 60 \text{ minutes} \times 7 \text{ hours} \times 220 \text{ days} = 92.400 \text{ minutes}$$

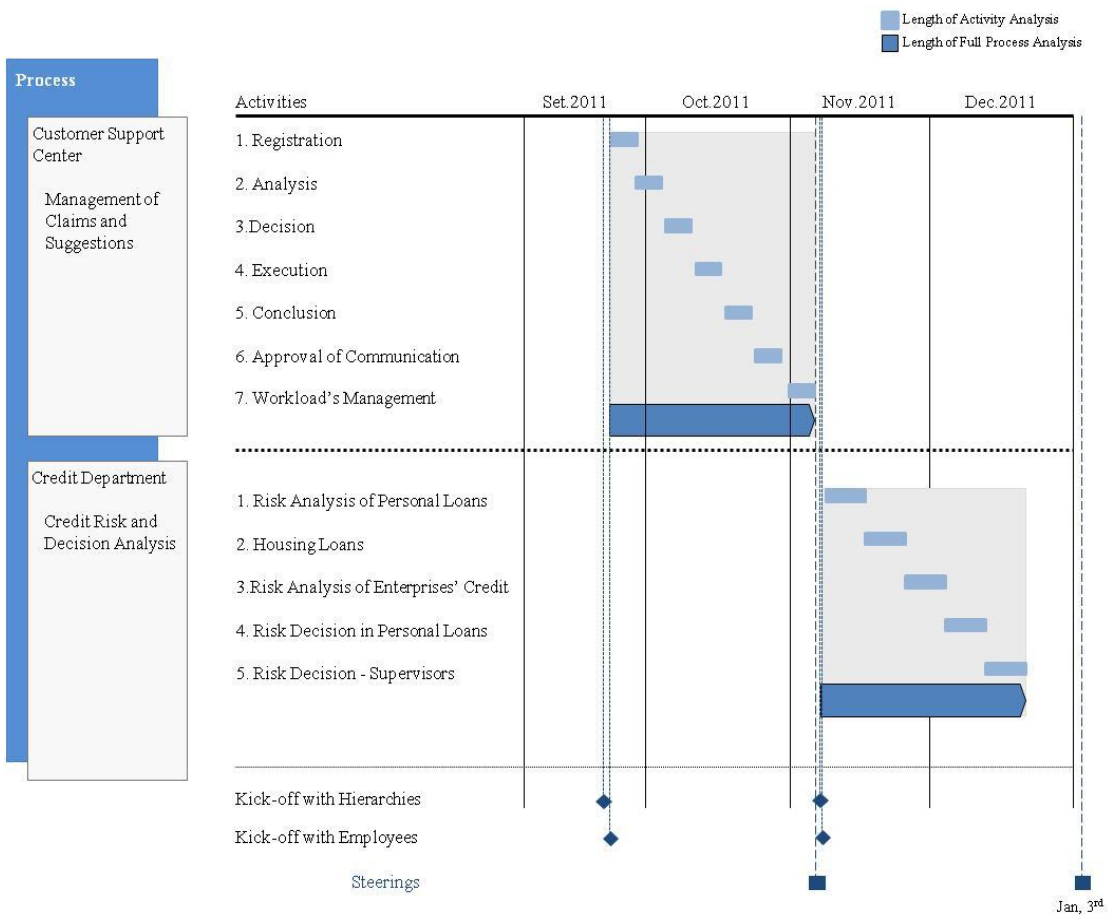
c. Planning the rollout. The third stage happens when the project's team plans the transition from a period where the department under analysis had an intense help from these *lean* experts, to a state of self-government and improvement. At this point is supposed that direct stakeholders of the process are already committed with *lean* thinking and enabled to pro-actively maintain a *kaizen* approach. The *lean* agents have the responsibility to promote a *lean* attitude, daily briefings, and name improvement opportunities responsible (*owners*). This stage marks the end of the project's team role in the implementation of *lean* methodology, thus a transition event takes place, with the following intention: delivery of letters of functions to *lean* agents, detailing each of the functions that a *lean* agent must accomplish; delivery of solution's forms to the *owners* of each *issue*, where is described in detail the problem and the proposed solution; presentation of incentives program, to reward the owners of ideas that improve processes; presentation of all identified *issues* and the quantified benefits, with a clear exhibition of the reachable savings and improvements the department can realize if all the solutions are implemented; lastly, to close the transition stage, a steering with hierarchies of each area is scheduled, with the intent to present all the work done during the time the project's team was in touch with employees and further steps are debated.

iii. Chronological Plan

My internship at the bank consisted in two major *Lean* "waves": the *Lean* Project applied to the Customer Support Center (CSC) and the Credit Department (CRD). Each of the projects had the duration of six weeks. In the CSC *Lean* Project 7 different

activities were analyzed. On the other hand, in the CRD *Lean* Project 5 main activities were considered. The next exhibit illustrates my internship:

Exhibit IV: Chronological Plan



Given that my internship had started on the 12th of September, I had about 9 days to get used to the bank’s *lean* methodology. This was very important for me. The last days, since the following *lean* wave was about to begin but I was not part of it, I had the opportunity to help on the improvement of the rollout strategy of the *lean* methodology and propose a different approach for this stage.

iv. Personal Role

As I stressed in the beginning of point 4., in this internship I was member of a team that had been working in this field for more than a year. As a team member, and following the methodology used by the organization, my role was more evident during the three

stages described in point ii), section 4. Throughout the preparation phase, my role was more towards helping producing the presentations for kick-offs and the training session. In these documents, it is important to clearly explain the key concepts that are part of *lean*, how the project will evolve and to prepare a visually attractive presentation. The following stage is when the project team is more active and important. At this point we get in touch, daily, with direct stakeholders of the process under analysis. My role is to provide all the resources needed to produce the VSM (i.e., *lean* room fully available, papers, etc.), ensure the employee is able to properly describe his/ her job and translate it to paper. Still in this stage, following the VSM and its validation by other employees, I had to produce the documents detailing the processes chart flow. Later, when the brainstorming takes place, we have to promote debate with all stakeholders concerning improvement opportunities. This is a huge challenge, because plenty of times employees are reluctant to change their work, either because they do not see the benefit of some solution or even where the problem is, or because they just do not want to go out of their comfort zone. Hence, it is challenging to promote debate in order to change, in order to improve and demonstrate there can be gains of efficiency, quality and risk assessment. Finally, at this level, other documents have to be produced, namely a sheet that aggregates all the detected *issues* and respective solutions, identified by type of inefficiency and type of solution. This kind of information requires that benefits of each of the *issues* are quantified, demanding a high capacity of data analysis. At the last stage of the project, the transition, my role is to choose the low cost solutions that can be immediately implemented and, if possible, with high returns. Thus, a number of about ten *issues* are considered as priority and delivered to the respective owners. This is another important visual management tool, once it has a great impact on all stakeholders

at the time they see the solutions being committed to an *owner* and that immediately it will be implemented. To conclude the transition event with direct stakeholders, all the *issues* that were found are presented and the ones considered of immediate implementation are highlighted. I was responsible for this last presentation.

v. The application of Ser Lean Project to the Department of Direct Banking – Customer Support Center

The mission of the CSC is to manage all forms of claims, suggestions or doubts that clients might have. The *Lean* Project, requested by the Chief Officer of the department, was applied to three different areas within the CSC: the area of credits and cards, which aims to deal with all contacts of customers related to cards and credit issues; the area of banking, which deals with all sort of contacts made by clients through the different channels, except credits and cards; finally, the area of supervision, which manages contacts received by clients or non-clients through the “Claims Book”, Customer Ombudsman. The analysts are divided in teams accordingly with their skills, and all written responses to claims (e.g. letter, bank email) require the approval of their supervisor, in other words, two signatures are required to send an answer to a customer. Thus, the flow of a claim follows five main steps: registration of the claim, analysis, decision, execution and conclusion. The registration of the contact of the client is a task executed by a team of two people, assembled to register in the internal system the type of claim, which consequently will send automatically the process for the respective team. All other steps are done by a single analyst and its separation is merely theoretical, in order to better access possible bottlenecks of the workflow. Indeed, only one process with five activities was mapped and analyzed with all employees of the area. Two more activities were analyzed within the scope of the project, at the level of

the supervisor, who is in charge to validate the responses prepared by the analysts: approval of communication, and workload's management. We expect that this area will be a project champion and will do the rollout of the project to other areas within the Department of Direct Banking.

vi. The application of Ser Lean Project to the Credit Department

The second and last *lean* “wave” of this internship at the bank was applied to the Credit Department, again requested by the respective Chief Officer. Within this department, the area of credit risk analysis was the selected one. Furthermore, inside this area I may distinguish between two core different groups: the group in charge to analyze lines and limits (LL) of small enterprises' credit and the group which is enabled to analyze personal credit (HCC), more specifically, housing loans, cards and consumer credit (each of these two groups is then divided in teams). This area has a very similar pattern comparing with CSC, in the way that every team has a supervisor and each decision of credit risk made by an analyst lacks of agreement from the supervisor. However, analysts are not allocated in teams by specific skills, but by region, this means that each team match with branches from different locations. Thus, the project addressed three main processes: risk analysis of personal loans; risk analysis of small enterprises' credit; and, lastly, credit risk analysis – approval by supervisor. Within these three processes, five activities were mapped and identified as flows: risk analysis of personal loans; due to the very high specifications of housing loans, the team decided to analyze this type of credit as a separate activity; risk analysis of small enterprises' credit (which incorporates risk decision too); risk decision for analysts of personal loans; and, finally, risk decision – supervisors. Again, although a single analyst works the analysis and risk decision as a continuous flow, these activities were divided and mapped as separated


flows, for the same reasons applied to the CSC. As well as in the case of CSC, the bank expects that this area will be a project champion.

5. Results

The CSC Wave

At CSC, during approximately seven weeks, the team was working in the field with the employees. Through this time, 39 improvement opportunities, and respective solutions, were identified. The exhibit V gives an idea about sources of waste that were found:

Exhibit V: Types of Waste per activity analyzed and quantity of issues



Activity	# of Types of Waste	Number of Issues
Registration	1, 4 and 6	5
Analysis	4, 6, 7 and 8	9
Decision	2, 4, 6 and 8	4
Execution	1, 2, 4, 6 and 8	9
Conclusion	2, 4, 6 and 8	4
Approval of communication	1, 4 and 6	5
Workload's management	5, 6 and 8	3

In terms of cost reductions, the registration activity is clearly the most inefficient one, with its improvement initiatives resulting to 60% of total cost savings after all 39 solutions are implemented. This is a unit where there is more rework, where duplication of work occurs very frequently without law requiring such steps. As one may see, the analysis' activity has a high number of improvement opportunities too. However, these are highly related with the internal IT system, which demands IT developments and most of the inefficiencies are related to the type of operational risk that cannot be quantified in numbers. We believe these developments can bring high benefits to the

area. In terms of FTEs, the execution activity is the “wasteland” of the process, counting one third of the total savings in time. This may be the activity where there is more room for standardization, once at this stage the analyst already has in her/ his mind the decision and it is just a matter of how to communicate the situation to the customer. This can be explained by the persistence of analysts in doing the execution on their own, either due to lack of supervision’s authority or inexistence of templates of response. The following exhibit details these numbers:

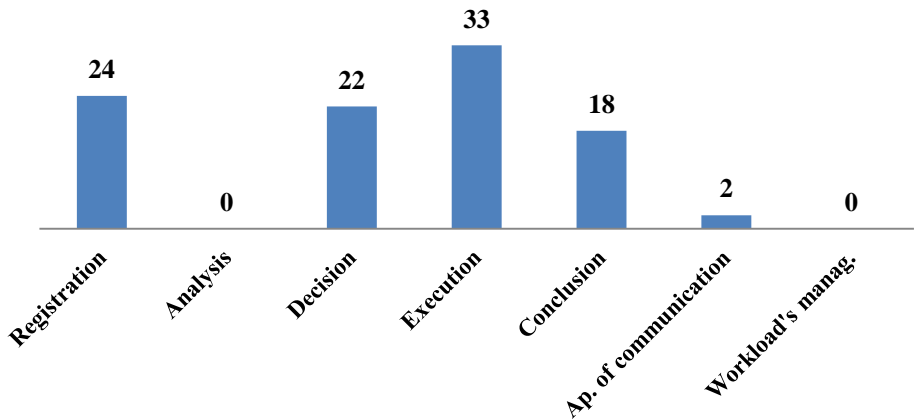
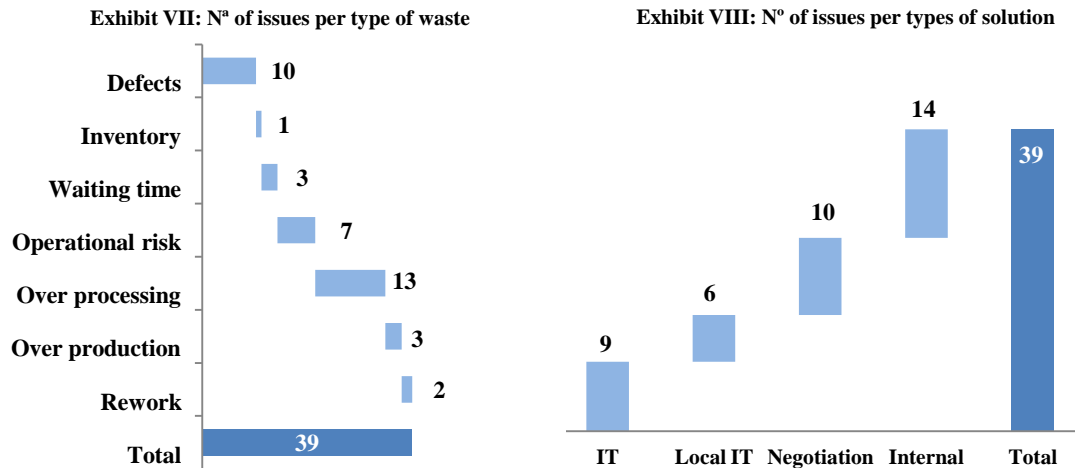


Exhibit VI: % of FTE's total value reduction

Finally, I would like to stress that the team tried to focus on improvement opportunities that could be immediately implemented, to help the buy-in of the project. This goal was clearly achieved as it can be seen in the following exhibits, where is shown the number of *issues* per type of waste and the respective solution and its characteristic:

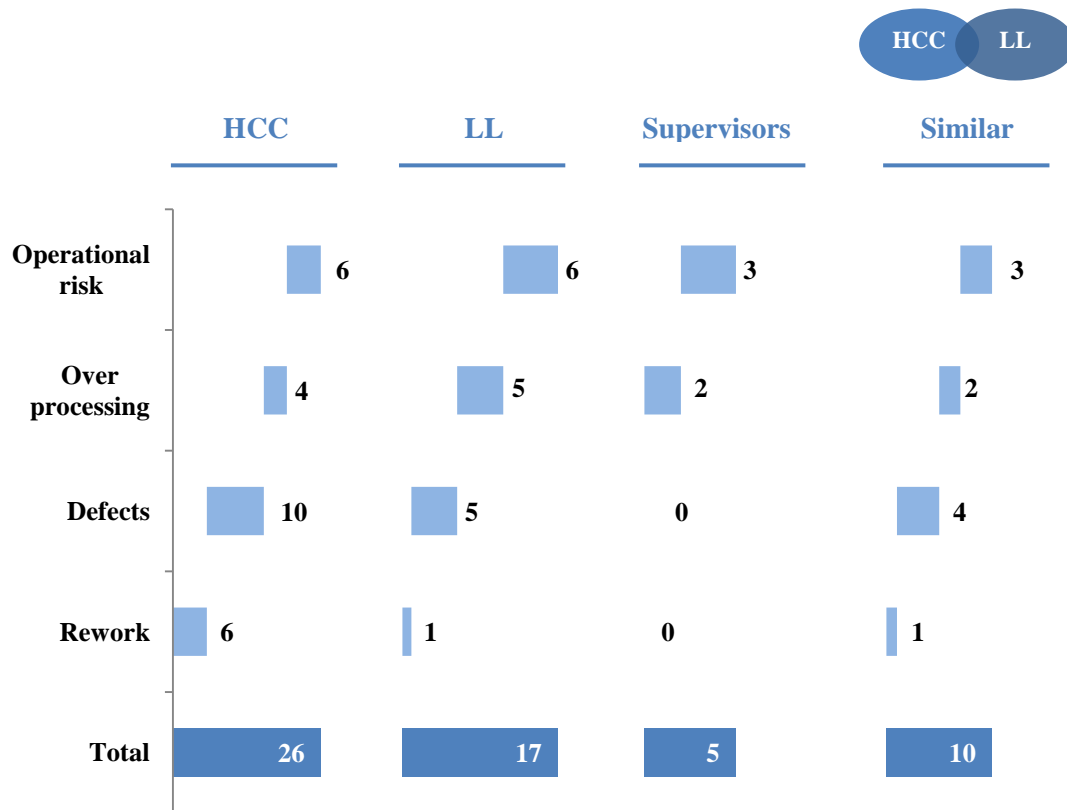


The fact that most of the initiatives are solutions decided and implement internally, brings more responsibility to the owner of the solution. This owner is responsible for the implementation of the solution, but not necessarily its execution, it can be delegated. This dynamic is an important tool for the buy-in of the project, once employees feel the change happening and the positive impact in their job in a short time due to their suggestions and work.

The CRD Wave

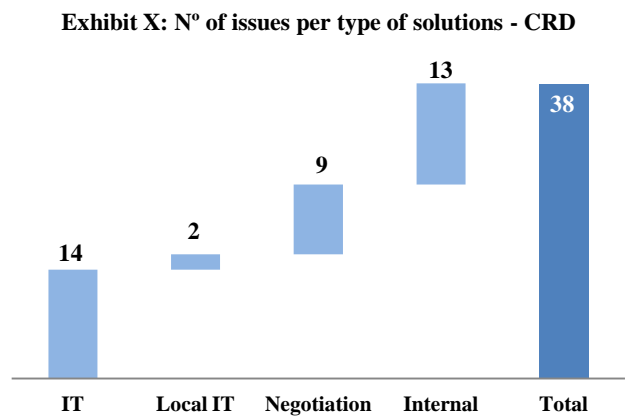
As it can be seen in the chronological plan, the wave at the Credit Department lasted for about six weeks and, during this time, 48 improvement opportunities were identified. Contrary to the process in the CSC, in this department there were no *issues* that carried a reduction of financial costs once they work entirely with IT technologies and no other resources are used. However, and against all odds of the team, the improvement opportunities identified by direct stakeholders can be translated in much higher and meaningful savings, in FTE's terms. Of the 48 identified issues, 10 are similar to the two main processes, LL and HCC, therefore were aggregated and 38 were listed and considered relevant. This can be seen in the exhibit IX:

Exhibit IX: N° of issues per type of

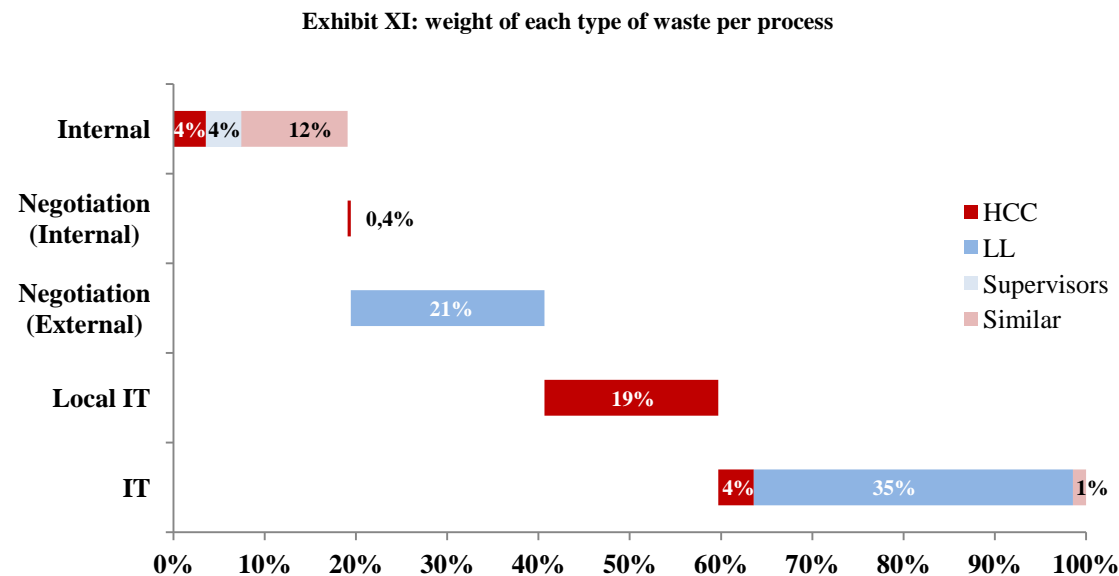


Although there is some dispersion of *issues* per type of waste, these identified types are not as diverse as in the CSC case. Four of five improvement opportunities identified as defects in the LL process are common to the HCC flow. These kinds of defects are mainly lack of automation and have origin in the usage of the same internal IT system. After the identification of the most efficient solution for each of the problems, these can be congregated into types of solutions, accordingly with our *lean* methodology. Again, the focus of the program is to prioritize solutions that do not require IT developments. However, in this area, as the analysts work exclusively with IT systems, the challenge was harder. The exhibit X details these solutions:

About 35% of the total number of improvement opportunities requires internal solutions, and less than 37% involve IT developments. This is an important finding, again, once these internal types of issues will



be considered as priorities and immediately implemented to make the change visible (the negotiation ones can be prioritized too), whilst the ones that require IT are negotiated with the IT Department. The following exhibit demonstrates the weight of each type of waste per process, in percentage of the total FTE’s reduction:



From the previous chart we concluded that IT developments will bring the highest value in time reduction. However, internal initiatives count for about 20% of the gains in time, which can be achieved in a very short term. Once more, it is important to stress that these priorities can be an important visual management tool if the employees see that these findings will bear a better quality for their work and life. The team of Lines and

Limits of small enterprises' credit has 21% of their initiatives dependent on their negotiations with other departments. On one hand it is needed negotiation, on the other hand it does not require IT developments, which means that these initiatives may be improvement opportunities for other departments too, bringing more synergies and higher gains for the institution. In this case we believe these initiatives will be easier to negotiate and immediately executed.

6. Conclusion

In recent years, the *lean* manufacturing principles have been more and more applied to a range of service environments, namely to the bank's sector. The financial crisis brought this urgency of rethinking the organization of financial services. Managers believe that outsourcing & offshoring operations do not bring a competitive advantage anymore, since most of the companies already work in this field. Thus, bringing more efficiency to the way banks work and the way they deliver services to customers is crucial to achieve competitive advantages. *Lean* can be a very effective methodology to achieve such goals. From my experience, during the 4 months' internship, *lean* principles can be adapted and applied to services. High savings can be achievable with implementation of low cost solutions, increase in quality too.

At the bank, important improvement opportunities were identified. These initiatives now have an owner that will be responsible to implement and a reward system will incentive the best ideas. The application of *Lean* Project to two different areas, the Customer Support Center and the Credit Department, allowed to identify 39 and 38 improvement opportunities, respectively. The exhibits XII and XIII demonstrate that these initiatives will bring savings for each of the areas:

Exhibit XII: Gains in time consumed, in FTE - CSC

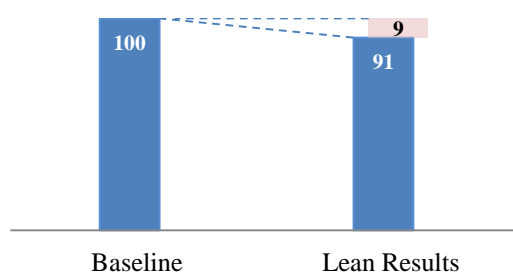
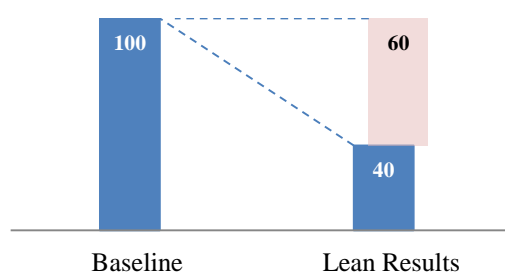


Exhibit XIII: Gains in time consumed, in FTE - CRD



In the end, applying *Lean* in the CSC area, allowed for the identification and implementation of the 39 improvement opportunities, making it possible to reallocate near 10% of the total time to other tasks and save about 10% of the total annual budget. In the CRD area the project concluded that if all the 38 identified waste sources and respective solutions are implemented, gains of about 60% of the time will be achieved and reallocated to other more productive tasks. These were the quantitative benefits of the *Lean* Project. However, that is not all: other important benefits were reached. The reduction of the operational risk, share of best practices, increase in the employees' motivation and engagement with the corporation, better service levels and reduction of processes that come from the branches with errors, are very significant benefits achieved by this project and that cannot immediately be quantified in financial terms. I would say that the change of mind set of employees is becoming a reality, and this may be the most important achievement of this project, although the accurate assessment of this change will only be possible in the long term. Finally, the *Lean* Project aimed to leave, in these areas, an installed capacity to constantly stalk new ways of improvement, towards the long term operational excellence, which is one of the core principles of the bank's mission and *lean* methodology is a tool within this strategy.

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